TECHNICAL BASIS FOR TIER I OPERATING PERMIT

DATE: September 3, 2002

PERMIT WRITER: Kent Berry

PERMIT COORDINATOR: Bill Rogers

SUBJECT: ***TECHNICAL ANALYSIS FOR TIER I OPERATING PERMIT***
AIRS Facility No. 039-00001, Mountain Home Air Force Base
Final Tier I Operating Permit

Permittee:	Department of the Air Force, Mountain Home Air Force Base
Permit Number:	039-00001
Standard Industrial Classification:	9711
Description:	National defense
Kind of Products:	N/A
Responsible Official:	Irving L. Halter, Brigadier General, USAF
Person to Contact:	Chad Parent
Telephone Number:	(208) 828-3724
# of Full-time Employees	5000
Facility Classification:	A
County:	Elmore
Air Quality Control Region:	063
UTM Coordinates:	592.5, 4667.0
Exact Plant Location:	Eight miles southwest of Mountain Home, Idaho, off State Rte. 67

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LIST OF ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AGE	Aerospace Ground Equipment
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CFR	Code of Federal Regulations
CO	carbon monoxide
Cr^{+6}	hexavalent chromium
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
EQ	Environmental Quality Management, Inc.
gr/dscf	grains per dry standard cubic foot
HAPs	hazardous air pollutants
HDI	hexamethylene diiocyanate
hr/yr	hours per year
HVLP	high-volume, low-pressure
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act.
km	kilometers
lb/gal	pounds per gallon
lb/hr	pound per hour
lb/yr	pounds per year
LPB-1330	large paint booth – hanger 1330
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
MSDS	Material Safety Data Sheets
MHAFB	Mountain Home Air Force Base
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operations and maintenance
O_2	oxygen
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
SPB-1330	small paint booth – hanger 1330
T/yr	tons per year
VOC	volatile organic compound
wt%	percent by weight

1. *PURPOSE*

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit in accordance with IDAPA 58.01.01.362, *Rules for the Control of Air Pollution in Idaho*.

On behalf of DEQ, EQ has reviewed the information provided by the Department of the Air Force regarding the operation of MHAFB located near Mountain Home, Idaho. This information was submitted on the requirements of the Tier I permit in accordance with IDAPA 58.01.01.300.

Based on the information submitted, DEQ has drafted a Tier I permit for MHAFB. The permit was submitted for public comment. A public hearing was scheduled and held concurrently with the public comment period. A proposed permit was developed provided to the EPA for review in accordance with IDAPA 58.01.01.366. The EPA provided no written objection to the proposed permit.

2. *SUMMARY OF EVENTS*

On June 15, 1995, DEQ received the Tier I permit application from the Department of the Air Force for MHAFB. CH2M Hill, the facility's consulting firm, prepared the application.

On October 26, 1995, the first update to the original application was received.

On June 1, 1999, DEQ received a second updated application from MHAFB, which was prepared by Kleinfelder, who is now the facility's consulting firm.

On September 29, 2000, a third update to the Tier I application was received by DEQ, also prepared by Kleinfelder.

A public comment period on the draft permit was held from July 25 through August 28, 2002. A public hearing was held on August 27, 2002. No comments were received on the draft permit.

A proposed permit was provided to the EPA for review on September 5, 2002. The EPA provided no written objections.

3. *BASIS OF THE ANALYSIS*

The following documents were relied upon in preparing this memorandum and the Tier I permit:

- Tier I permit application, received June 5, 1995, with supplemental application materials received October 26, 1995; June 1, 1999; and September 29, 2000
- Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995, Office of Air Quality Planning and Standards, EPA
- Guidance developed by EPA and DEQ
- 40 CFR Part 70
- Documents and procedures developed in the Title V Pilot Operating Permit Program
- Inspection reports, permits, and other material contained in DEQs MHAFB source file

4. *FACILITY DESCRIPTION*

4.1 GENERAL PROCESS DESCRIPTION

The facility is a military base under the command of the U.S. Air Force. The base houses the 366th Composite Wing, which is classified as an Air Force Fighter Wing. The wing consists of F-15C, F-15E, and

F-16 fighters only. To support the aircraft mission, and the Air Force personnel and their dependents, the base operates a number of facilities that are air pollution sources, which include the following:

- Aircraft operation and maintenance
- Aircraft engine testing
- Ground vehicle operation and maintenance
- Hospital
- Portable sources
- Base maintenance activities

The activities at the base also include a large number of air pollution sources classified as insignificant activities in accordance with IDAPA 58.01.01.317.

4.2 FACILITY CLASSIFICATION

When all sources are aggregated, MHAFB is a major facility as defined in IDAPA 58.01.01.006.54, but it is not a PSD major facility. The facility is not a designated facility as defined in IDAPA 58.01.01.006.25. The AIRS facility classification is "A." The primary activity at the facility is classified as SIC code 9711, national security. However, the base contains a number of different activities that are separately classified (e.g., the base hospital is classified as SIC code 8062, general medical and surgical hospitals; the Army/Air Force Exchange Service gasoline service station is classified as SIC code 5541, gasoline filling stations retail, etc.).

4.3 AREA CLASSIFICATION

The facility is located in Elmore County near Mountain Home, Idaho. Elmore County is located in AQCR 63. This area is designated attainment or unclassifiable for all regulated criteria air pollutants. There are no Class I areas within 10 km of the facility.

4.4 PERMITTING HISTORY

Based on a review of DEQ's MHAFB source file, the following chronological listing, by source type, has been established for the facility's permitting history:

A. Hospital Incinerator

On June 19, 1986, a PTC was issued for a medical waste incinerator for the new base hospital.

On November 15, 1988, a modified PTC was issued for the medical waste incinerator.

On October 4, 1989, a modified PTC was issued for the medical waste incinerator.

Per a DEQ inspection conducted on July 25, 1997, the hospital medical waste incinerator was rendered inoperable sometime in 1995 and removed from the base sometime in 1996.

B. Central Heat Plant

On July 31, 1980, a state of Idaho operating permit was issued for the central heat plant. The expiration date of this permit was July 30, 1985.

In June of 1993, a PTC was issued for the central heat plant, authorizing a change in fuel from coal to natural gas.

On March 31, 1995, a modified PTC was issued for the central heat plant.

On January 8, 1996, a modified PTC was issued for the central heat plant.

On November 15, 1999, a modified PTC was issued for the central heat plant. This permit supersedes all other permits issued for the central heat plant.

On November 2, 2001, a request to cancel the PTC for the central heat plant was received. The central heat plant was permanently closed on November 30, 2001.

C. Hospital Boilers

On November 18, 1998, a PTC was issued for the operation of three boilers at the base hospital.

D. Portable Sources

On April 19, 2000, a PTC was issued to allow portable sources (rock crushers, hot-mix asphalt plants, and concrete batch plants) to operate on the base.

On August 28, 2000, a modified PTC was issued for portable source operations. This permit supersedes all other permits issued for portable source operations.

On October 5, 2001, DEQ received a memorandum dated October 5, 1999, written by David C. Bray, Senior Air Pollution Scientist, Office of Air Quality, EPA Region 10, addressing portable sources operating on military installations. Portable sources are not considered part of the base; therefore, their emissions are not counted. Portable sources are not included in this permit.

E. Jet Engine Testing

On September 13, 1996, an exemption from permitting requirements was issued for Hush House 1.

On November 30, 1999, a PTC was issued to allow jet engine testing in the hush houses.

F. Corrosion Control Hanger 1330

On February 2, 1995, a PTC was issued for the corrosion control aircraft paint booth.

On September 22, 1995, a modified PTC was issued for the corrosion control paint booth.

On January 17, 2001, a modified PTC was issued for the corrosion control paint booth.

On April 27, 2001, a modified PTC was issued for the corrosion control paint booth.

G. Bead-blasting Hanger 1330

On November 22, 1995, a PTC was issued for the bead-blasting unit in hanger 1330.

H. Corrosion Control Hanger 192

On December 16, 1997, an exemption from permitting requirements was issued for the corrosion control aircraft paint booth located in hangar 192.

I. Flight Line Area Spray Painting

On November 8, 1999, a PTC was issued for the flight line area spray painting operations.

On March 30, 2000, a modified PTC was issued for the flight line area spray painting operations.

J. Vehicle Spray Paint Booth

On May 28, 1992, a PTC was issued for a vehicle spray paint booth.

On April 18, 1996, a modified PTC was issued for the vehicle paint booth.

On September 19, 1999, a modified PTC was issued for the vehicle paint booth.

K. Aerospace Ground Equipment (AGE)

On June 7, 2000, the EPA issued a ruling allowing the internal combustion AGE to be considered a non-road engine and therefore exempt from permitting and registration fee payment.

On July 31, 2000, DEQ issued an exemption from permitting requirements for all turbine engine AGE.

L. Base Hospital, Ethylene Oxide Gas Sterilizer

On September 3, 1996, an exemption from permitting was issued for a backup, ethylene-gas sterilizer. The ethylene oxide sterilizer has since been removed.

M. Revised and Consolidated Permit

On May 30, 2002, a revised and consolidated PTC was issued for the following sources:

- Hospital Boilers
- Hush House I and Hush House II
- Bead-Blasting Unit
- Flight Line Area Spray Painting
- Vehicle Spray Painting Booth
- Aircraft and Aircraft Parts Surface-coating Spray Booths Building 1330 (Corrosion Control Hanger)

5. REGULATORY ANALYSIS - FACILITY-WIDE APPLICABLE REQUIREMENTS

5.1 RULES FOR THE CONTROL OF FUGITIVE DUST – [IDAPA 58.01.01.650-651 (5-1-94)]

5.1.1 Requirement

Permit Condition 1.1 states that all reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651.

5.1.2 Compliance Demonstration

Fugitive emissions have the potential to be created by vehicle traffic on any paved or unpaved surface, portable source operation, activity at the base landfill, and any maintenance activity that can create the potential for windblown fugitive dust. Permit Condition 1.2 states that MHAFB is required to monitor and record the frequency and the methods used by the facility to reasonably control fugitive emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions, which include use of water or chemicals, application of dust suppressants, use of control equipment, covering of open-bodied trucks, paving of roads or parking areas, and removal of materials from streets.

Permit Condition 1.3 requires that MHAFB maintain records of all fugitive dust complaints received. In addition, MHAFB is required to take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. Mountain Home AFB is also required to maintain records that include the date each complaint was received and a description of the complaint, their assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by MHAFB to reasonably control fugitive emissions, Permit Condition 1.4 requires periodic inspections of the facility whether or not a complaint is received. Mountain Home Air Force Base is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If it is determined fugitive emissions are not being reasonably controlled, MHAFB shall take corrective action as expeditiously as practicable. Mountain Home Air Force Base is also required to maintain records of the results of each fugitive emission inspection.

Both Permit Conditions 1.3 and 1.4 require MHAFB to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.2 CONTROL OF ODORS – [IDAPA 58.01.01.775-776 (5-1-94)]

5.2.1 Requirement

Permit Condition 1.5 and IDAPA 58.01.01.776 both state that: *"No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution."* This condition is currently considered federally enforceable until such time it is removed from the state implementation plan (SIP), at which time it will be a state-only enforceable requirement.

5.2.2 Compliance Demonstration

Permit Condition 1.6 requires MHAFB to maintain records of all odor complaints received. If the complaint has merit, MHAFB is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date each complaint was received and a description of the complaint, assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 1.6 requires MHAFB to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.3 VISIBLE EMISSIONS – [IDAPA 58.01.01.625 (4-5-00)]

5.3.1 Requirement

Permit Condition 1.7 and IDAPA 58.01.01.625 state that *"(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than twenty percent (20%) opacity as determined . . ."* by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason for the failure of the emissions to comply with this rule.

5.3.2 Compliance Demonstration

To ensure reasonable compliance with the visible emissions rule, Permit Condition 1.8 requires that MHAFB conduct routine visible emissions inspections of the facility. Mountain Home Air Force Base is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source. If any visible emissions are present from any point of emissions covered by this section, MHAFB must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If the opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, MHAFB must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess

emissions rules in IDAPA 58.01.01.130-136. Mountain Home Air Force Base is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of MHAFB's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

If a specific emissions unit has a specific compliance demonstration method for visible emissions that differs from Permit Condition 1.8, then the specific compliance demonstration method overrides the requirement of Permit Condition 1.8. Permit Condition 1.8 is intended for small sources that would generally not have any visible emissions.

Permit Condition 1.8 requires MHAFB to take corrective action as expeditiously as practicable. In general, DEQ believes taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.4 STARTUP, SHUTDOWN, SCHEDULED MAINTENANCE, SAFETY MEASURES, UPSET, AND BREAKDOWNS – [IDAPA 58.01.01.130-136 (4-5-00)]

5.4.1 Requirement

Permit Condition 1.9 requires that MHAFB comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. However, it should be noted that Subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if MHAFB anticipates requesting consideration under Subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states, "*The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*" Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in Subsections 133.03.a and 134.06.b. Therefore, since MHAFB has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05, and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

5.4.2 Compliance Demonstration

The compliance demonstration is contained within the text of Permit Condition 1.9. No further clarification is necessary here.

5.5 EXCESS EMISSIONS – [IDAPA 58.01.01.130-136 (4-5-00)]

Mountain Home Air Force Base has not identified any circumstances for startup, shutdown, or maintenance that would create excess emissions. This permitting action does not include any review and incorporation of excess emissions plans in the permit. Excess emissions are defined by IDAPA 58.01.01.006.35.

The applicable regulations for excess emissions procedures are addressed in IDAPA 58.01.01.130-136. Permit Condition 1.9 incorporates these requirements.

5.6 OPEN BURNING – [IDAPA 58.01.01.600-616 (3-19-99)]

5.6.1 Requirement

The rules governing the control of open burning are presented in IDAPA 58.01.01.600-616. MHAFB has identified two forms of open burning conducted at the facility. Training fires are the first type of open burning. Training fires are defined in part by IDAPA 58.01.01.609 as:

"Open outdoor fires used by qualified personnel to train firefighters in the methods of fire suppression and fire fighting techniques... [5-1-94]"

Training fires of this type are conducted routinely in the base fire-training pit. Jet fuel (JP-8) is ignited around a mock-up of an aircraft, and fire crews extinguish the fire using various methods and techniques. These fires are allowable forms of open burning.

The second type of open burning conducted at the base is the disposal of dangerous materials. Dangerous material fires are defined in IDAPA 58.01.01.615 as:

"Open outdoor fires used or permitted by a public or military fire chief to dispose of materials (including military ordnance) which present a danger to life, valuable property or the public welfare, or for the purpose of prevention of a fire hazard when no practical alternative method of disposal or removal is available are allowable forms of open burning. [5-1-94]"

These types of fires are conducted in accordance with IDAPA 58.01.01.615 as necessary.

5.6.2 Monitoring & Recordkeeping Requirements

See Permit Condition 1.11.

5.7 RENOVATION/DEMOLITION (ASBESTOS)- 40 CFR PART 61, §§140-147

5.7.1 Requirement

See Permit Condition 1.13.

5.7.2 Monitoring & Recordkeeping Requirements

See Permit Condition 1.11.

5.8 RISK MANAGEMENT PLAN (CHEMICAL ACCIDENT PREVENTION)- [40 CFR PART 68]

See Permit Condition 1.14.

Any facility that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, must comply with the requirements of the Chemical Accident Prevention Provisions in 40 CFR Part 68 no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR Part 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process.

This facility is not currently subject to the requirements of 40 CFR Part 68. However, should MHAFB ever become subject to the requirements of 40 CFR Part 68, it must comply with the provisions contained in 40 CFR Part 68 within the time frame listed above.

This requirement is included in the permit because MHAFB has an ongoing responsibility to submit a risk management plan if the base acquires listed substances in quantities over the threshold amount or if there is

ever an increase in the amount of any regulated substance above the threshold quantity. Including this term in the permit minimizes the need to reopen the permit if MHAFB becomes subject to the requirement to submit a risk management plan.

Based on a MHAFB submittal dated October 1, 2000, the base currently has no regulated substances above the threshold quantities in this rule.

5.9 EMISSION TEST METHODS

See Permit Condition 1.15.

5.10 FUEL-BURNING EQUIPMENT [IDAPA 58.01.01.676-677 (5-1-94)]

5.10.1 Requirement

See Permit Condition 1.16.

5.10.2 Monitoring & Recordkeeping Requirements

Emissions unit groups are addressed in specific sections. Permit Condition 1.16 addresses the small emissions units. No specific monitoring is required for the small emissions units.

5.11 FUEL SULFUR CONTENT - [IDAPA 58.01.01.728 (5-1-94)]

5.11.1 Requirement

See Permit Condition 1.17.

5.11.2 Monitoring & Recordkeeping Requirements

See Permit Condition 1.11.

5.12 RECYCLING AND EMISSIONS REDUCTION [40 CFR 82 SUBPART F]

5.12.1 Requirement

See Permit Condition 1.19.

5.12.2 Monitoring & Recordkeeping Requirements

See Permit Condition 1.11.

5.13 COMPLIANCE TESTING

See Permit Condition 1.18.

5.14 TRADING SCENARIOS

Specific trades were not requested in the application.

5.15 AFFECTED STATES NOTICE AND REVIEW

There are no affected states as defined by IDAPA 58.01.01.008.02.

5.16 HAZARDOUS AIR POLLUTANTS

Per the information supplied in the MHAFB Tier I application update dated September 29, 2000, the PTE of all HAPs is 12.1 T/yr. The maximum PTE of any single HAP is 3.1 T/yr. Therefore, MHAFB is not a major source of HAPs as defined in IDAPA 58.01.01.008.10.a.i and 40 CFR Part 63.2. Thus, MHAFB is not subject to the NESHAPs for Aerospace Manufacturing and Rework Facilities (40 CFR Part 63, Subpart GC) or the proposed NESHAP for Engine Test Cells/Stands (40 CFR Part 63, Subpart PPPPP), which apply only to major HAP sources.

5.17 NSPS APPLICABILITY

No subparts of 40 CFR Part 60 apply to MHAFB.

6. REGULATORY ANALYSIS- EMISSION UNITS

6.1 EMISSION UNIT GROUP 1: HOSPITAL BOILERS

6.1.1 Emission Unit Description

Mountain Home Air Force Base operates three dual-fuel-fired boilers at the base hospital. Each boiler is rated at 3.18 MMBtu/hr and can combust natural gas or distillate fuel. All three boilers exhaust emissions to the atmosphere through a common stack. The boilers were constructed at the base hospital in 1998 and are used for space heating and other needs. These boilers are not subject to 40 CFR 60 Subpart Dc. The boiler manufacturer and stack specifications are listed below.

- Manufacturer — Kewanee
- Model — L3SW-125-GO
- Stack height (feet) — 36
- Stack diameter (feet) — 3
- Flow Rate (acfm) — 60,661 (combined flow rate from all three boilers)

6.1.2 Permit Limits

Permit to Construct No. 039-00001, issued May 30, 2002, establishes the following emissions and operational limitations:

Table 6.1.2 Emissions Unit Group 1: Hospital Boilers Emission/Operational Limits

Parameter	Permit Limit	Applicable Requirements Reference
SO_2	2.1 T/yr, 500 hr/yr	PTC No. 039-00001
PM	Distillate fuel - 0.05 gr/dscf at 3% O_2 Natural gas - 0.015 gr/dscf at 3% O_2	IDAPA 58.01.01.676
Opacity	20% opacity for no more than three minutes in any 60-minute period	IDAPA 58.01.01.625
Fuel sulfur content	ASTM Grade 1 - 0.3% by weight ASTM Grade 2 - 0.5% by weight	IDAPA 58.01.01.728

The permittee shall not operate any hospital boiler for more than 500 hours per any consecutive 12-month period when combusting distillate fuel. There are no hours of operation limitations when combusting natural gas.

Visible emissions shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required in IDAPA 58.01.01.625.

6.1.3 Monitoring Recordkeeping & Reporting Requirements

Permit to Construct No. 039-00001, issued May 30, 2002, and IDAPA 58.01.01.322 establish the following monitoring, recordkeeping, and reporting requirements:

- Mountain Home Air Force Base shall record the number of hours each boiler combusts distillate fuel on a monthly basis. The No. 1 and No. 2 distillate fuel maximum sulfur content by weight shall be monitored by MHAFB, or be certified by the supplier, each time distillate fuel is introduced into the No. 1 or No. 2 distillate fuel storage.

- Visible emissions observations shall be conducted during daylight hours once per calendar quarter on each boiler stack while each boiler is in normal operation. The length of each observation shall be no less than 10 minutes. A certified or non-certified observer can conduct this observation. If any visible emissions are observed, a visible emissions observation shall be conducted in accordance with IDAPA 58.01.01.625 and this permit.

- Based on emissions factors contained in EPA's AP-42[1] for natural gas and distillate fuel oil combustion, and the combined maximum fueling rate of the three hospital boilers, emissions calculations indicate the particulate matter emission rate limits of 0.050 gr/dscf at 3% O_2, and 0.015 gr/dscf at 3% O_2 ,will never be exceeded so long as the boilers are operated as mandated by this permit.

  For example, the AP-42 emission factor for distillate fuel oil is 1.08 pounds of PM per 1000 gallons distillate fuel oil combusted. Multiplying this emission factor by the combined maximum fueling rate for all three boilers, 112.2 gal/hr, yields an emission rate of 0.12 lb/hr.
  The following equation indicates compliance with the PM grain-loading standard (IDAPA 58.01.01.676).

$$((0.12 \text{ lb/hr}) \times (7{,}000 \text{ gr/lb}) \times (1 \text{hr}/60 \text{ min}))/(60{,}661 \text{ acfm}) = 0.0002 \text{ gr/scf}$$

6.2 EMISSIONS UNIT GROUP 2: JET ENGINE TESTING

6.2.1 Emissions Unit Description

Mountain Home Air Force Base tests aircraft engines as required by operational conditions. The engines are tested in either one of two "hush houses," which were constructed to minimize the noise from engine test operations. Hush House I was constructed in 1986, Hush House II was constructed in 1988. Each hush house consists of a large building, a test stand, control room, and an augmentor tube (stack) that is 25 feet in height and 22 feet in diameter. The stack has numerous baffles to dissipate the sound energy. Engines are removed from the aircraft and transported to one of the Hush Houses, affixed to a test stand, and then adjusted and/or repaired. Upon completion of the adjustments and repairs, the engine is test fired at idle, approach, intermediate, military, and/or afterburner power settings for a short time period. Each criteria pollutant has an individual emissions rate when operated at each power setting. When the engines are removed from the aircraft, they are called "stationary engines." Aircraft are considered a mobile source; therefore, the testing of engines that are installed in the aircraft are exempt from permitting and registration fees.

No PTC was obtained for either hush house prior to construction; therefore, the PTE for all criteria pollutants was not limited. Based on certified information submitted by MHAFB, it does not appear the construction of the hush houses triggered PSD permitting review prior to construction. Permit to Construct No. 039-00001, issued on May 30, 2002, limits the hush houses PTE by imposing the following emission limits:

[1] Compilation of Air Pollution Emission Factors (Research Triangle Park, NC: EPA, Office of Air Quality Planning and Standards, AP-42, 5th Edition, January 1995), pp. 1.3-1, 1.4-1.

6.2.2 Emission Limits

Table 6.2.2 Jet Engine Testing Emissions Limits

Source Description	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hush Houses I and II combined	4.0	4.0	1.5	85	13	63

Visible emissions from the augmentor tube, or any other stack, vent, or equivalent opening shall not exceed 20% for a period or periods aggregating more than three minutes in any 60 minute period as required in IDAPA 58.01.01.625.

Permit to Construct No. 039-00001, issued May 30, 2002, establishes the following operational limitations:

- Jet Engine Types

  Stationary engines tested in Hush House I and II must be Model No. F100-220 or Model No. F100-229 only.

- Stationary Jet Engine Hours of Testing Limits

  The permittee shall not operate the stationary engines for more than 690 hours per any consecutive 12-month period.

  Testing of stationary engines in the Military power setting is limited to 103.5 hours per any consecutive 12-month period.

  Testing of stationary engines in the Afterburner power setting is limited to 75.9 hours per any consecutive 12-month period.

- Testing Location

  All stationary engines must be tested inside a hush house.

6.2.3 Monitoring and Recordkeeping Requirements

Permit to Construct No. 039-00001, issued May 30, 2002, establishes the following monitoring, recordkeeping, and reporting requirements:

- Stationary Jet Engine Testing Monitoring

  Each month the permittee shall monitor and record the operating hours and power settings of stationary jet engines for the previous 12 month period. A compilation of the most recent five years of monitoring records shall be kept onsite and made available to Department representatives upon requests.

- Visible Emissions

  The permittee shall conduct a visible emissions observation on each augmentor tube once per month, during daylight hours, when in operation under normal operating conditions. The length of each observation shall be no less than 10 minutes. If any visible emissions are present at the time of the observation, the permittee shall conduct a visible emissions observation in accordance with IDAPA 58.01.01.625. During this observation, a minimum of thirty 15-second observations shall be recorded while the process is in operation. If opacity is greater than 20%, as determined in accordance with IDAPA 58.01.01.625, the permittee shall take all necessary corrective action and report excess emissions in accordance with Permit Condition 1.9. the permittee shall record the results of each visible

emissions observation, and corrective action taken, if any, and maintain the records in accordance with Permit Condition 1.11.

6.2 EMISSIONS UNIT GROUP 3: AIRCRAFT AND AIRCRAFT PARTS SURFACE COATING SPRAY BOOTHS

6.3.1 Emissions Unit Description

The corrosion control treating process was installed in 1995, and consists of surface preparation and painting of aircraft and aircraft parts in one of two paint booths. The entire aircraft and some parts are treated in the large paint booth (LPB-1330), while only parts are painted in the small paint booth (SPB-1330). The items to be treated are first cleaned with solvents, then painted using HVLP paint spray guns. The painting equipment is cleaned with solvents after use. Both paint booths exhaust through particulate filters that have a manufacturer-rated efficiency of 97%. Paint booth LPB-1330 also exhausts through a carbon adsorption filter, which has a manufacturer-rated efficiency of 90% for VOC emissions. There are two adsorption beds, with a monitoring system set in place to detect the breakthrough of VOC. When it is determined that breakthrough is detected, the beds are changed and sent off for regeneration. Permit to Construct No. 039-00001, dated May 30, 2002, limits the amount of paints and solvents used on a 24-hour and annual basis. Also, the amount of paint used containing HDI is limited on a daily basis. There are no pound-per-hour or ton-per-year emissions rate limitations for PM, PM_{10}, or VOCs in the PTC. Paint booth LPB-1330 exhausts through four identical stacks. Each stack is 40 feet tall, and 3 feet in diameter. The combined flow rate through all four stacks is 21,900 acfm. SPB-1330 exhausts through a single 40 foot tall stack that is 3 feet in diameter. The flow rate through this stack 16,400 acfm.

6.3.2 Emission Limits

Table 6.3.1 summarizes the applicable emission limits for this unit.

Table 6.3.2 EMISSION UNIT GROUP 3: AIRCRAFT AND AIRCRAFT PARTS SURFACE COATING SPRAY BOOTHS EMISSION

Permit Conditions	Parameter	Permit Limit	Applicable Requirements Reference
4.1	Opacity	20% opacity for no more than three minutes in any 60-minute period	IDAPA 58.01.01.6251
4.2	PM	Process weight rate	IDAPA 58.02.02.701

Permit to Construct No. 039-00001 issued May 30, 2002, and IDAPA 58.01.01.322 establish the following operational limitations:

- LPB-1330 Throughput Limit

  The maximum throughput of all coatings and solvents in LPB-1330 shall not exceed 684 gal/day or 1,250 gallons per any consecutive 12-month period.

- SPB-1330 Throughput Limits

  The maximum throughput of coatings and solvents in SPB-1330 shall not exceed 140 gal/day or 350 gallons per any consecutive 12-month period.

- Hexamethylene Diisocyanate (HDI)

  The maximum daily throughput of materials containing not more than 1% by weight HDI (CAS No. 82-06-0) shall be limited to the quantities listed in the following table. The maximum daily throughput of materials containing in excess of 1% by weight HDI shall be determined on a case-by-case basis.

Because this condition is not related to Clean Air Act requirements, it is a state-only enforceable requirement.

Table 6.3.3 Aircraft and Aircraft Parts Surface Coating Spray Booths
No More than 1% HDI Containing Material Throughput Limitations

LPB-1330 Throughput Limits

HDI Upper Limit	Density Range		Calculated Throughput Limit
	Lower	Upper	
$C_{L\ (wt\%)}$	ρ_L (lb/gal)	ρ_L (lb/gal)	Q_L (gal/day)
1.0%	< 8.0	8.0	431
1.0%	8.0	10.0	345
1.0%	10.0	12.0	288
1.0%	12.0	14.0	246
1.0%	14.0	16.0	216

Table 6.3.4 SPB-1330 Throughput Limits

HDI Upper Limit	Density Range		Calculated Throughput Limit
	Lower	Upper	
C_s (wt%)	ρ_s (lb/gal)	ρ_s (lb/gal)	Q_s (gal/day)
1.0%	< 8.0	8.0	32
1.0%	8.0	10.0	25
1.0%	10.0	12.0	21
1.0%	12.0	14.0	18
1.0%	14.0	16.0	18

- Material Usage Requirements

  The permittee shall only use materials in painting booth LPB-1330 and painting booth SPB-1330 that are included in the material inventory list required by Permit Condition 4.11.

- Maintain Efficiency of the Booth

  The permittee shall conduct inspections of the LPB-1330 particulate-matter filtration system, the LPB-1330 VOC adsorption system, and the SPB-1330 particulate-matter filtration system on days the paint booths are in operation. The filtration systems shall be maintained in accordance with manufacturer specifications and the filtration system O&M manual.

- Filtration System

  The pressure drop across the LPB-1330 and SPB-1330 particulate-matter filtration systems shall be maintained within the manufacturer or O&M manual specifications.

- Spray Paint Guns

  The permittee shall use HVLP spray paint guns or equivalent low-emissions spray guns for bulk-paint applications.

6.3.3 Monitoring and Recordkeeping Requirements

Permit to Construct No. 039-00001 and IDAPA 58.01.01.322 require the following information to be monitored and recorded:

- Throughput Monitoring

  The permittee shall monitor and record the throughput (type and amount) of all coatings and solvents applied in painting booth LPB-1330 and painting booth SPB-1330 on days of application. Throughput shall be recorded in gallons per day (gal/day) and gallons per any consecutive 12-month period. The consecutive 12-month period throughput shall be calculated monthly. A compilation of the most recent 5 years of records shall be maintained onsite and shall be made available to Department representatives upon request.

- Material Inventory List

  The permittee shall develop a list of all coatings and solvents that are used in LPB-1330 and SPB-1330. The list shall constitute the materials that may be applied in the booths. The list shall include, but is not limited to, the following information: the name and identification number of each substance, its density in pounds per gallon (lb/gal), its VOC content in percent by weight (wt%), and its content in percent by weight of any toxic air pollutant regulated under IDAPA 58.01.01.585 and 586.

  To verify information contained in the list, the permittee shall maintain all manufacturer/supplier specifications and material safety data sheets (MSDS) for each product. The list of materials shall remain onsite at all times and shall be made available to Department representatives upon request.

- Filtration System Inspection and Maintenance

  The permittee shall maintain records of all inspections and maintenance performed on the LPB-1330 particulate-matter filtration system, the LPB-1330 VOC adsorption system, and the SPB-1330 particulate-matter filtration system. The records shall contain, but are not limited to, the date of the inspection and/or maintenance performed, the relative condition of the filter pads, and the type of maintenance performed (e.g., replacement of pads, etc.). A compilation of the most recent 5 years of inspection and maintenance records shall be kept onsite and shall be made available to Department representatives upon request.

- Monitoring of HDI-Containing Materials

  The permittee shall record the days of application for all materials used in the booths that contain quantifiable amounts of HDI. The records shall contain, but are not limited to, the following information: the name and identification number of each HDI-containing product in pounds per gallon (lb/gal), throughput calculations for materials containing more than 1% by weight HDI, and the amount used in gallons of each products. A compilation of the most recent 5 years of records shall be kept onsite and shall be made available to Department representatives upon request. This is also a state-only enforceable requirement.

- Operations and Maintenance Manual

  The permittee shall have developed an O&M manual for the LPB-1330 particulate-matter filtration system and VOC adsorption system, and the SPB-1330 particulate-matter filtration system. The manual shall describe the procedures that will be followed to comply with the manufacturer specifications for the air pollution control devices. This manual shall remain onsite at all times and shall be made available to Department representatives upon request.

6.4 EMISSION UNIT GROUP 4: FLIGHT LINE AREA SPRAY PAINTING

6.4.1 Emission Unit Description

Mountain Home Air Force Base occasionally requires that open-air spray painting operations be conducted in the flight line area. This area includes, but is not limited to, aircraft ramps, aprons, open hangers, and

static display aircraft. The coatings are applied using HVLP spray equipment. Permit to Construct No. 039-00001, permitting flight line area spray painting, was issued by DEQ November 8, 1999, and was last modified May 30, 2002. There are no stack parameters associated with this process.

6.4.2 Permit Limits

Table 6.4.2 contains a summary of the allowable emissions limitations. Permit to Construct No. 039-00001 established these limitations on May 30, 2002. The allowable material usage limitations were derived from SCREEN3 modeling of emissions rates contained in the PTC application.

Table 6.4.2 Emissions Unit Group 4: Flight Line Area Spray Painting Emission Limits

Permit Conditions	Parameter	Permit Limit	Applicable Requirements Reference
5.1	Opacity	20% opacity for no more than three minutes in any 60-minute period	IDAPA 58.01.01.625
5.2	VOC	1.5 T/yr	PTC No. 039-00001

PTC 039-0001 establishes the following operational requirements:

- Paint Throughput Limit

  The maximum throughput of all coatings and solvents applied in open-air spray painting operations in the flight line area shall not exceed 16.1 gal/day, nor shall it exceed 300 gallons per any consecutive 12-month period.

- Spray Paint Guns

  The permittee shall use HVLP spray paint guns or equivalent low-emissions spray guns for bulk paint applications.

6.4.3 Monitoring, Recordkeeping Requirements

Permit to Construct No. 039-00001 establishes the following monitoring and recordkeeping requirement:

- Throughput Monitoring

  The permittee shall monitor and record the throughput (type and amount) of all coatings and solvents applied in open-air spray painting operations in the flight line area. Throughput shall be recorded in gallons per day (gal/day) and gallons per any consecutive 12-month period. The consecutive 12-month period throughput shall be calculated monthly. A compilation of the most recent 5 years of records shall be maintained onsite and shall be made available to Department representatives upon request.

6.5 EMISSIONS UNIT GROUP 5: VEHICLE SPRAY PAINT BOOTH

6.5.1 Emissions Unit Description

Building 1100 contains a vehicle spray paint booth that was constructed in 1992. The booth is used to paint base vehicles (trucks, buses, etc.) and parts as required. Aircraft parts and architectural pieces are not painted in this booth. The booth exhausts through a particulate filter bank, which has a manufacturer-rated control efficiency of 95%. Emissions from the paint spray booth exhaust through a stack that measures 30 feet tall and 4 feet in diameter. The airflow rate is 25,600 acfm. Permit to Construct No. 039-00001 was issued prior to construction in 1992, and the permit has been modified several times; the most recent modification was issued May 30, 2002.

6.5.2 Emission Limits

Permit to Construct No. 039-00001 and IDAPA 58.01.01.702 establish the following emission limits:

Table 6.5.2 Emissions Unit Group 5: Vehicle Spray Paint Booth Emission Limits

Permit Conditions	Parameter	Permit Limit	Applicable Requirements Reference
6.1	PM	Process weight rate	IDAPA 58.01.01.701
6.2	VOC	4 T/yr	PTC No. 039-00001
6.3	Opacity	20% opacity for no more than three minutes in any 60-minute period	IDAPA 58.01.01.625

Permit to Construct No. 039-00001 issued May 30, 2002 establishes the following operating requirements on the vehicle spray paint booth:

- Paint Throughput Limit

  The maximum throughput of all coatings and solvents applied in the spray paint booth shall not exceed 300 gallons per any consecutive 12-month period.

- Filtration System

  The pressure drop across the spray paint booth filters shall be maintained within manufacturer specifications.

- Maintain Efficiency of the Booth

  The permittee shall conduct inspections of the particulate-matter filtration system on days the paint booth is in operation. The filtration system shall be maintained in accordance with manufacturer specifications.

- Spray Paint Guns

  The permittee shall use HVLP spray paint guns or equivalent low-emissions spray guns for bulk-paint applications.

6.5.3 Monitoring Recordkeeping Requirements

Permit to Construct No. 039-00001, issued May 30, 2002, establishes the following monitoring, recordkeeping, and reporting requirements:

- Throughput Monitoring

  The permittee shall monitor and record the throughput (type and amount) of all coatings and solvents, applied in the paint booth on a daily and annual basis. Throughput shall be recorded in gallons per day (gal/day) and gallons per any consecutive 12-month period. The consecutive 12-month period throughput shall be calculated monthly. A compilation of the most recent 5 years of records shall be maintained onsite and shall be made available to Department representatives upon request.

- Filter System Inspection and Maintenance

  The permittee shall maintain records of all inspections and maintenance performed on the particulate-matter filtration system. The records shall include, but are not limited to, the date of the inspection and/or maintenance performed, the relative condition of the filter pads, and the type of maintenance performed (e.g., replacement of pads, etc.). A compilation of the most recent 5 years of inspection and maintenance records shall be kept onsite and shall be made available to Department representatives upon request.

6.6 EMISSIONS UNIT GROUP 6: BEAD-BLASTING UNIT BUILDING 1330

6.6.1 Emissions Unit Description

A plastic media bead-blast unit installed in Building 1330 is used to strip paint from small components such as fuel tanks and bomb racks. The coatings used on these components are typically high in Cr^{+6} content. The booth exhausts through a particulate filter (baghouse) rated at 99.9% efficient for removing particles 1 micron or greater, and 100% efficient for particles 2 microns or greater. The bead-blast unit consists of the following equipment or equivalent: enclosure and reclaimer assembly - Pauli and Griffin; pollution control equipment - Pauli and Griffin; dust collector, model number 984-017; and 984-020 filter cartridges. The baghouse vent is 13 feet tall, 1.6 feet. in diameter, with a flow rate of 6,000 acfm. Permit to Construct No. 039-00001 was issued for the bead-blast unit on November 22, 1995, and revised May 30, 2002.

6.6.2 Emission Limits

Table 6.6.2 Emissions Unit Group 6: Bead-blasting Unit Building 1330 Emission Limits

Parameter	Permit Limit / Standard Summary	Applicable Requirements Reference
PM	Process weight rate	IDAPA 58.01.01.701
Cr^{+6}	0.137 lb/yr	PTC No. 039-00001 (state-only)
Opacity	20% opacity for no more than three minutes in any 60-minute period	IDAPA 58.01.01.625, PTC No. 039-00001

Permit to Construct No. 039-00001, issued May 30, 2002 establishes, the following operational requirements:

- Operating Hours Limit

  The permittee shall not operate the bead-blast unit for more than 4,500 hours per any consecutive 12-month period.

- Hexavalent Chromium Weight Percent

  The annual average weight percent of Cr^{+6} shall not exceed 1.075% of the particulate matter controlled by the dust collector assembly per any consecutive 12-month period. This is a state-only enforceable requirement.

- Pollution Control Equipment

  The permittee shall operate and maintain the dust collector assembly in accordance with manufacturer specifications.

6.6.3 Monitoring and Recordkeeping Requirements

Permit to Construct No. 039-00001 sets forth the following monitoring and recordkeeping requirements:

- Operating Hours

  The permittee shall monitor and record the beat-blast unit hours of operation on a monthly and annual basis. A compilation of the most recent 5 years of records shall be maintained onsite and shall be made available to Department representatives upon request.

- Hexavalent Chromium Sampling

  The permittee shall monitor and record the Cr^{+6} weight percent of the particulate matter collected by the dust collector assembly. The material shall be sampled and analyzed prior to disposal. A compilation of the most recent 5 years of records shall be maintained onsite and shall be made available to Department representatives upon request. This is a state-only enforceable requirement.

6.7 EMISSIONS UNIT GROUP 7: MISCELLANEOUS SOURCES

Several air pollution sources exist at MHAFB which are exempt from obtaining a PTC in accordance with IDAPA 58.01.01.220-223. The source is exempt from obtaining a PTC only if operated in accordance with the information on which the exemption was based. The miscellaneous sources consist of, but are not limited to, turbine AGE, PB-198 (B-1 hanger), fire training pit, ordinance disposal, and all fixed internal combustion generators and pumps. The generators and pumps range in size from 5 to 1609 horsepower. The turbine AGE and B-1 hanger were self-exempted by MHAFB. DEQ issued written concurrence with these self-exemptions at the request of MHAFB. Regulatory compliance for all miscellaneous sources is demonstrated by complying with all applicable Permit Conditions.

7. INSIGNIFICANT ACTIVITIES

Mountain Home Air Force Base has identified a large number of insignificant activities described in accordance with IDAPA 58.01.01.317. A complete listing of these insignificant activities is presented in Permit Condition 9 of the Tier I permit.

8. ALTERNATIVE OPERATING SCENARIOS

Mountain Home Air Force Base has withdrawn its request for the inclusion of the alternative operating scenarios included in its application.

9. TRADING SCENARIOS

No emissions trading scenarios were requested in the permit application.

10. COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION

10.1 COMPLIANCE PLAN

Mountain Home Air Force Base certified compliance with all applicable requirements. No compliance plan was submitted.

10.2 COMPLIANCE CERTIFICATION

Mountain Home Air Force Base will be required to periodically certify compliance in accordance with General Permit Provision 13.21.

11. ACID RAIN PERMIT

No acid rain permit is required for this facility.

12. CHEMICAL ACCIDENT PREVENTION (40 CFR 68)

Based on the MHAFB submittal dated October 1, 2000, MHAFB currently has no regulated substances above the threshold quantities in this rule.

13. AIRS DATABASE

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61/63)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N - Nonattainment
SO_2	B					B	U
NO_x	A					A	U
CO	A					A	U
PM_{10}	B					B	U
PM	B					B	U
VOC	B					B	U
Total HAPs	B						U
			APPLICABLE SUBPART				

AIRS/AFS CLASSIFICATION CODES:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
B = Actual and potential emissions below all applicable major source thresholds.
C = Class is unknown.
ND = Major source thresholds are not defined (e.g., radionuclides).

14. REGISTRATION FEES

The emissions fees for the permitted sources will be determined according to IDAPA 58.01.01.387.

15. RECOMMENDATION

Based on the Tier I application and review of all applicable federal regulations and state rules, staff recommends DEQ provide proposed Tier I operating permit No. 039-00001 to EPA Region 10 for their review as required by IDAPA 58.01.01.366.